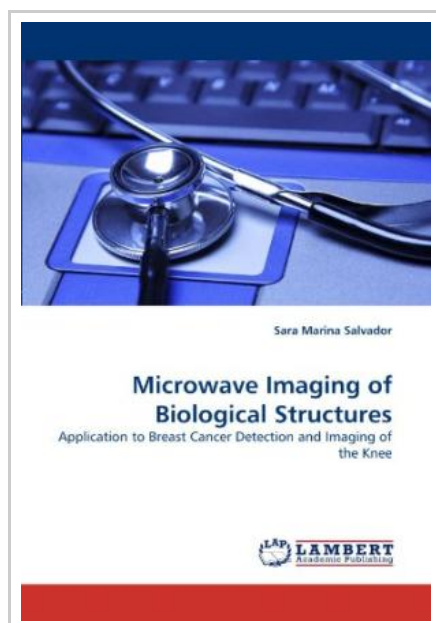




Microwave Imaging of Biological Structures: Application to Breast Cancer Detection and Imaging of the Knee

By Sara Marina Salvador

LAP LAMBERT Academic Publishing, 2010. Taschenbuch. Book Condition: Neu. Neu Neuware; original eingeschweisst; Rechnung mit MwSt.; new item, still sealed; - Over the past several years, microwave imaging has grown as a promising technique for the imaging of biological structures. Thanks to the high sensitivity, simplicity, low cost and the use of non-ionizing radiations, it seems to be a valid complement to the more traditional techniques, such as radiography, magnetic resonance and ultrasound. In this work, the capability of the microwave imaging technique to detect early stage breast cancer and lesions of the knee (in particular meniscal tears and lesions of the tendons) is analysed. For both the applications, a preliminary numerical study is presented, followed by experiments performed on realistic phantoms (breast) and real biological tissues (knee). Results demonstrate the great potential of this technique in both the considered fields. This work, besides introducing the topic of microwave imaging of biological tissues in a simple and complete way, poses the basis for clinical campaigns necessary to evaluate 'in vivo' the capability of this method for the detection of breast cancer and lesions of the knee. 144 pp. Englisch.



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